

CLAIMS:

1. A method for a predistortion linearization of a branched signal for a RF amplifier, comprising:

- supplying an input signal to at least one input terminal (2);
- distributing the input signal present on at least one input terminal (2) to a plurality of parallel branch-circuits (16, 18, 20) as branched signals by a power distributing circuit (4);
- controlling a phase parameter and/or an amplitude parameter of the branched signals by at least one nonlinear branch-circuit (18, 20);
- controlling a phase parameter and an amplitude parameter of the branched signals by at least one linear branch-circuit (16);
- combining output signals of at least one nonlinear branch circuit (18, 20) with the output signals of at least one linear branch circuit (16) by a power combining circuit (12);
- providing an final output signal of the predistortion unit from the power combining circuit (12) on at least one output terminal (14).

2. The method of claim 1, wherein the controlling of a phase parameter and/or an amplitude parameter of the branched signal by at least one nonlinear branch-circuit (18, 20) comprises:

- controlling a phase of a branched signal by at least one phase control unit (6) and/or;
- controlling an amplitude of a branched signal by at least one linear amplitude control unit (8) and/or;
- controlling an amplitude of a branched signal by at least one nonlinear amplitude control unit (10).

3. The method of claim 1, wherein the controlling of a phase parameter and/or an amplitude parameter of a branched signal by at least one linear branch-circuit (16) comprises:

- controlling a phase variation of a branched signal by at least one phase control unit (6) and/or;

- controlling an amplitude of a branched signal by at least one linear amplitude control unit (8).

4. The method of claim 2, wherein the linear amplitude control unit (8) and/or the nonlinear amplitude control unit (10) are/is controlled depending on a power level of an input signal.

5. The method of claim 2 or 3, wherein the linear (8) amplitude control unit and/or the nonlinear amplitude control unit (10) are/is controlled depending on an external adjustable value.

6. The method of claim 1, wherein the linear (16) amplitude control unit and/or the nonlinear branch-circuit (18, 20) have their/its own specific RF power level from which their/its predistortion of amplitude and/or phase starts, which is defined by an individual nonlinear function.

7. A method for a predistortion linearization, in particular compensation of temperature of a linearized power module, where a varicap is a controlled element of an AM/AM compensation loop and an amplifier control element for AM/PM compensation, comprising:

- supplying an input signal to at least one input terminal (2);
- distributing the input signal present on at least one input terminal (2) to a plurality of parallel branch-circuits (16, 18, 20) as branched signals by a power distributing circuit;
- controlling a phase parameter and/or an amplitude parameter of the branched signals by at least one nonlinear branch-circuit (18, 20);
- controlling a phase parameter and/or an amplitude parameter of the branched signals by at least one linear branch-circuit (16);
- combining the output signal of at least one nonlinear branch circuit (18, 20) with the output signal of at least one linear branch circuit (16) by a power combining circuit (12);
- providing a final output signal of the predistortion unit from the power combining circuit (12) on at least one output terminal (14).

8. An electronic device comprising a circuit for a predistortion unit linearizing a signal for a RF amplifier, comprising:

- at least one input terminal (2) supplying an input signal;
- a power distributing circuit (4) distributing the input signal present on at least one input terminal (2) to a plurality of parallel branch-circuits (16, 18, 20) as branched signals;
- at least one nonlinear branch-circuit (18, 20) controlling a phase parameter and/or an amplitude parameter of the branched signals;
- at least one linear branch-circuit (16) controlling a phase parameter and/or an amplitude parameter of the branched signals;
- a power combining circuit (12) combining output signals of at least one nonlinear branch circuit (18, 20) with the output signals of at least one linear branch circuit (16);
- at least one output terminal (14) providing an output signal of the predistortion unit from the power combining circuit (12).

9. The device of claim 8, wherein the nonlinear branch-circuit (18, 20) comprises:

- at least one phase control unit (6) controlling the phase of a branched signal and/or;
- at least one linear amplitude control unit (8) controlling the amplitude of a branched signal and/or;
- at least one nonlinear amplitude control unit (10) controlling the amplitude of a branched signal.

10. The device of claim 8, wherein the linear branch-circuit (16) comprises:

- at least one phase control unit (6) controlling the phase of a branched signal and/or;
- at least one linear amplitude control unit (8) controlling the amplitude of a branched signal.

11. The device of claim 9, wherein the nonlinear amplitude control unit (10) comprises at least one nonlinear element and at least one amplifier.

12. The device of claim 10, wherein the linear amplitude control unit (8) is a gain control amplifier (280) and/or an attenuator and/or a resistor and/or a dissipative transmission line and/or a controllable resistive component.

5 13. The device of any of the claims 8 to 12, wherein the linear (16) and/or the nonlinear branch-circuit (18, 20) have a filtering circuit at an output terminal.

14. The device of claim 8, wherein the phase control unit comprises at least one transmission line (204) or at least one controlled resistive element (326).

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15. The device of any of the claims 8 to 12, wherein the circuit is integrated with a semiconductor device.